



04-26-04

EXPRESS MAIL NO. EV449558657US

**TRANSMITTAL  
FORM**(To be used for all correspondence  
after initial filing)

Application Number	10/688,835
Filing Date	October 16, 2003
First Named Inventor	James D. Sterling
Art Unit	1744
Examiner Name	
Attorney Docket No.	530045.415C1

**ENCLOSURES (check all that apply)**

- ☐ Fee Transmittal Form
- ☐ Fee Attached
- ☐ Amendment/Response
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☒ Information Disclosure Statement; Form PTO-1449
- ☒ Cited References
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts under 37 C.F.R. 1.52 or 1.53
- ☐ Response to Missing Parts/Incomplete Application

- ☐ Drawing(s)
- ☐ Request for Corrected Filing Receipt
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation, Change of Correspondence Address
- ☐ Declaration
- ☐ Statement under 37 CFR 3.73(b)
- ☐ Terminal Disclaimer
- ☐ Request for Refund

- ☐ CD(s), Number of CD(s) \_\_\_\_\_
- ☐ After Allowance Communication to Group
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to Group (*Appeal Notice, Brief, Reply Brief*)
- ☐ Proprietary Information
- ☐ Status Letter
- ☒ Return Receipt Postcard
- ☐ Additional Enclosure(s) (*please identify below*):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Remarks**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Individual Name	Frank Abramonte	Customer Number <b>00500</b>
Signature		
Date	April 23, 2004	

**CERTIFICATE OF TRANSMISSION/MAILING**

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Typed or printed name	SENT VIA EXPRESS MAIL	
Signature		Date:

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : James D. Sterling et al.  
Application No. : 10/688,835  
Filed : October 16, 2003  
For : METHOD, APPARATUS AND ARTICLE FOR MICROFLUIDIC  
CONTROL VIA ELECTROWETTING, FOR CHEMICAL,  
BIOCHEMICAL AND BIOLOGICAL ASSAYS AND THE LIKE

Art Unit : 1744  
Docket No. : 530045.415C1  
Date : April 23, 2004

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

## Commissioner for Patents:

In accordance with 37 C.F.R. §§ 1.56 and 1.97 through 1.98, applicants wish to make known to the Patent and Trademark Office the references set forth on the attached Form PTO-1449. This application relies, under 35 U.S.C. § 120, on the earlier filing date of prior Application No. 10/305,429, filed November 26, 2002. With the exception of references AQ and BH-BJ, all of the references listed on the attached Form PTO-1449 were submitted to and/or cited by the Patent and Trademark Office in this prior application and, therefore, are not required to be provided in this application. If the Examiner wishes, copies will be provided upon request.

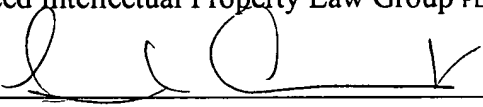
A copy of reference AQ is provided herewith. Since the application filing date is after June 30, 2003, copies of cited U.S. patents and published patent applications are not required and accordingly copies of references BH-BJ have not been provided.

reference, as by a showing under 37 C.F.R. § 1.131 or other method. Although the aforesaid references are made known to the Patent and Trademark Office in compliance with applicants' duty to disclose all information they are aware of which is believed relevant to the examination of the above-identified application, applicants believe that their invention is patentable.

Please acknowledge receipt of this Information Disclosure Statement and kindly make the cited references of record in the above-identified application.

Applicants believe this Information Disclosure Statement has been timely filed, however, the Director is authorized to charge any fee due by way of this Information Disclosure Statement to our Deposit Account No. 19-1090.

Respectfully submitted,  
Seed Intellectual Property Law Group PLLC


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Frank Abramonte  
Registration No. 38,066

Enclosures:  
Postcard  
Form PTO-1449  
Cited Reference (1)

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FORM PTO-1449 (REV. 7-80)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 530045.415C1	APPLICATION NO. 10/688,835
 INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		APPLICANTS James D. Sterling et al.	
		FILING DATE October 16, 2003	GROUP ART UNIT 1744

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA	4,583,824	04/22/86	Lea	350	267	
	AB	5,194,862	03/16/93	Edwards	341	20	
	AC	5,495,077	02/27/96	Miller et al.	178	18	
	AD	5,632,876	05/27/97	Zanzucchi et al.	204	600	
	AE	5,750,015	05/12/98	Soane et al.	204	454	
	AF	5,858,188	01/12/99	Soane et al.	204	454	
	AG	6,007,690	12/28/99	Nelson et al.	204	601	
	AH	6,136,212	10/24/00	Mastrangelo et al.	216	49	
	AI	6,294,063	09/25/01	Becker et al.	204	450	
	AJ	6,318,970	11/20/01	Backhouse	417	92	

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION	
					YES	NO
	AK	WO 00/69565	11/23/00	WIPO		
	AL	WO 02/07503 A1	01/31/02	WIPO		

## OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	AM	Beni, G. et al., "Dynamics of Electrowetting Displays," <i>J. Appl. Phys.</i> 52(10):6011-6015, October 1981.
	AN	Chigrinov, V., <i>Liquid Crystal Devices: Physics and Applications</i> , Artech House, 1999, Chapter 3, "Liquid Crystal Displays", pp. 215-286.
	AO	Cho, S. et al., "Splitting a Liquid Droplet for Electrowetting-Based Microfluidics," in <i>Proceedings of the 2001 ASME Int'l. Mech. Engineering Congress and Exposition</i> , New York, NY, November 11-16, 2001, pp. 1-7.
	AP	Cho, S. et al., "Towards Digital Microfluidic Circuits: Creating, Transporting, Cutting and Merging Liquid Droplets by Electrowetting-Based Actuation," <i>IEEE</i> , pp. 32-35, 2002.
*	AQ	Hayes, R. et al., "Video-Speed Electronic Paper Based on Electrowetting," <i>Nature</i> 425:383-385, September 2003.

EXAMINER	DATE CONSIDERED
* EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant(s).	

\* Only received this NPL.

FORM PTO-1449 (REV.7-80)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 530045.415C1	APPLICATION NO. 10/688,835
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## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	BA	6,369,954	04/09/02	Berge et al.	359	666	
	BB	6,449,081	09/10/02	Onuki et al.	359	245	
	BC	6,454,924	09/24/02	Jedrzejewski et al.	204	601	
	BD	6,473,492	10/29/02	Prins et al.	378	158	
	BE	6,565,727	05/20/03	Shenderov	204	600	
	BF	2001/0026935	10/04/01	Ackley et al.	435	286.1	
	BG	2002/0043463	04/18/02	Shenderov	204	450	
	BH	2004/0055536	03/25/04	Kolar et al.	118	626	
	BI	2004/0055891	03/25/04	Pamula et al.	205	98	
	BJ	2004/0058450	03/25/04	Pamula et al.	436	150	

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION	
					YES	NO
	BK					

## OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	BL	Lee, J. et al., "Surface-Tension-Driven Microactuation Based on Continuous Electrowetting," <i>J. of Microelectromechanical Systems</i> 9(2):171-180, June 2000.
	BM	Lee, J. et al., "Addressable Micro Liquid Handling by Electric Control of Surface Tension," in <i>Proceedings of the IEEE Int'l. Micro Electro Mechanical Systems Conference</i> , New York, NY, January 21-25, 2001, pp. 499-502.
	BN	Lueder, E., <i>Liquid Crystal Displays, Addressing Schemes and Electro-Optical Effects</i> , John Wiley & Sons, 2001, Chapter 10, "Addressing Schemes for Liquid Crystal Displays", pp. 161-163 and Chapter 14, "Addressing of Liquid Crystal Displays with a-Si Thin Film Transistors (a-Si-TFTs)", pp. 211-248.
	BO	Moon, H. et al., "Low Voltage Electrowetting-On-Dielectric," <i>J. of Appl. Phys.</i> 92(7):4080-4087, October 2002.

EXAMINER	DATE CONSIDERED
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	CA						
	CB						
	CC						
	CD						
	CE						
	CF						
	CG						

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION	
					YES	NO
	CH					
	CI					
	CJ					

## OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	CK	Pollack M. et al., "Electrowetting-Based Actuation of Liquid Droplets for Microfluidic Applications," <i>Appl. Phys. Letters</i> 77(11):1725-1726, September 2000.
	CL	Pollack, M. et al., "Electrowetting-Based Actuation of Droplets for Integrated Microfluidics," <i>Lab on a Chip</i> 2:96-101, 2002.
	CM	Quilliet, C. et al., "Electrowetting: A Recent Outbreak," <i>Curr. Opin. in Colloid &amp; Interface Science</i> 6:34-39, 2001.
	CN	Vallet, M. et al., "Limiting Phenomena for the Spreading of Water on Polymer Films by Electrowetting," <i>Eur. Phys. J. B.</i> 11:583-591, 1999.
	CO	Vallet, M. et al., "Electrowetting of Water and Aqueous Solutions on Poly(Ethylene Terephthalate) Insulating Films," <i>Polymer</i> 37(12):2465-2470, 1996.
	CP	Yeh, P. et al., <i>Optics of Liquid Crystal Displays</i> , John Wiley & Sons, 1999, Chapter 6, "Matrix Addressing, Colors, and Properties of LCDs", pp. 248-267.

EXAMINER	DATE CONSIDERED
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